Log Event A

Borehole # 52-02-06

Borehole Information

Farm : TY   **Tank :** TY-102   **Site Number :** 299-W10-171

N-Coord : 42,552   **W-Coord :** 75,954   **TOC Elevation :** Unknown

Water Level, ft :   **Date Drilled :** 1977

Casing Record

Type : Steel-welded   Thickness : 0.280   ID, in. : 6

Top Depth, ft. : 0   Bottom Depth, ft. : 101

Borehole Notes:
The driller's log for this borehole could not be located. The casing thickness is presumed to be 0.280 in., on the basis of published thickness for schedule-40, 6-in. steel tubing. The top of the casing, which is the zero reference for the SGLS, is approximately 0.3 ft below the tank farm grade inside a plastic valve box.

Equipment Information

Logging System : 2   **Detector Type :** HPGe   **Detector Efficiency:** 35.0 %

Calibration Date : 10/1995   **Calibration Reference :** GJPO-HAN-3   **Logging Procedure :** P-GJPO-1783

Log Run Information

Log Run Number : 1   **Log Run Date :** 5/8/1996   **Logging Engineer:** Alan Pearson
Start Depth, ft.: 99.5   **Counting Time, sec.:** 100   **L/R :** L   **Shield :** N
Finish Depth, ft. : 34.0   **MSA Interval, ft. :** 0.5   **Log Speed, ft/min.:** n/a

Log Run Number : 2   **Log Run Date :** 5/8/1996   **Logging Engineer:** Alan Pearson
Start Depth, ft.: 0.0   **Counting Time, sec.:** 100   **L/R :** L   **Shield :** N
Finish Depth, ft. : 9.0   **MSA Interval, ft. :** 0.5   **Log Speed, ft/min.:** n/a

Log Run Number : 3   **Log Run Date :** 5/9/1996   **Logging Engineer:** Alan Pearson
Start Depth, ft.: 35.0   **Counting Time, sec.:** 100   **L/R :** L   **Shield :** N
Finish Depth, ft. : 8.0   **MSA Interval, ft. :** 0.5   **Log Speed, ft/min.:** n/a

Borehole   # 52-02-06

Analysis Information

Analyst :   S.D. Barry

Data Processing Reference :   P-GJPO-1787   Analysis Date :   1/27/1997

Analysis Notes :

This borehole was logged in three log runs. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during the logging operation.

Casing correction factors for a 0.280-in.-thick steel casing were applied during analysis.

The only man-made radionuclide detected in this borehole was Cs-137. The presence of Cs-137 was measured continuously from the ground surface to about 3 ft, 12.5 to 15 ft, and 19.5 to 20 ft. The maximum Cs-137 concentration was 0.99 pCi/g at 1 ft.

The K-40 concentration values begin to increase at about 52.5 ft and the Th-232 and U-238 concentrations begin to increase at about 93 ft.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Reports for tanks TY-102 and TY-104.

Log Plot Notes:

Separate log plots show the man-made (Cs-137) and the naturally occurring radionuclides (KUT). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.